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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/996,320	11/21/2001	Saad A. Sirohey	GEMS:0166/YOD(31-IS-6171)	3586

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Tait R. Swanson
Fletcher, Yoder & Van Someren
P.O. Box 692289
Houston, TX 77269-2289

EXAMINER	
CHEN, WENPENG	

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 08/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/996,320	SIROHEY ET AL.	
	Examiner	Art Unit	
	Wenpeng Chen	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time mey be eveileble under the provisions of 37 CFR 1.136(a). In no event, however, mey e reply be timely filed efter SIX (6) MONTHS from the meiling date of this communicetion.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the meiling dete of this communication.
- Feilure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office leter than three months efter the meiling date of this communication, even if timely filed, may reduce any earned petent term edjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-19,21-24 and 26-86* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-19,21-24 and 26-86* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/17/2006*. 5/30/06
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/30/2006 has been entered.

Examiner's responses to Applicant's remark

2. Applicants' arguments, filed on 5/26/2006, with regard to all the art rejection have been fully considered but are moot in view of the new ground(s) of rejection due to Applicants' amendments to the listed claims.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-2, 4-5, 7-12, 19, 21-24, 26-28, 29-36, 40-49, 50-63, and 73-86 are rejected under 35 U.S.C. 102(e) as being anticipated by Keith et al. (US patent 5,881,176.)

a. For Claims 1-2, 4-5, 7-12, 19, 21-24, 26-28, Keith teaches a method for selectively transferring image data, the method comprising:

-- for Claim 1, selecting an image resolution suitable for display in a desired viewport, wherein the image resolution corresponds to one set of a plurality of data sets decomposed from an image by lossless wavelet decomposition; (column 8, lines 11-68; column 33, line 36 to column 34, line 38; The parsing which is also called quantization here. The quantization here is based on truncation of codestream resulted on wavelet decomposition such as LL, LH. Display with a full image or a ROI is a viewport. The reversible wavelet transform is lossless wavelet decomposition.)

-- for Claim 1, selectively requesting a portion of the plurality of data sets for recomposition of the image at the image resolution, the portion of the plurality of data sets being smaller than the plurality of data sets wherein selectively requesting the portion comprises requesting a data stream comprising the portion of the plurality of data sets arranged sequentially in a desired order based on the lossless wavelet decomposition, wherein the data sets form part of an image data file that is losslessly wavelet decomposed and that is stored in a losslessly compressed form on a server independent of any request from a client; (column 8, lines 11-68; column 11, lines 12-15; column 34, line 64 to column 35, line 56; When a agent or device provides its device characteristics to parse, it inherently selective requesting a portion of data to be displayed in its display. Lossless compressed data with markers are stored in a server before any request as shown in Fig. 24.)

-- for Claim 2, wherein the lossless wavelet decomposition comprises lossless integer wavelet decomposition; (column 11, lines 17-50)

-- for Claim 4, wherein the acts of selecting the image resolution and selectively requesting the portion are executed automatically; (column 34, line 64 to column 35, line 56; The parser based on the received device characteristics selects the resolution and portion automatically without human control.)

-- for Claim 5, wherein each of the data sets comprises a hierarchical set of sub-bands, one set comprising a low frequency component at a lowest resolution level and each remaining set comprising high frequency components at successively higher resolution levels; (for example Fig. 3D)

-- for Claim 7, wherein selecting the image resolution comprises selecting the image resolution from a plurality of progressively higher resolution levels, each corresponding to one of the plurality of data sets. (column 34, lines 19-39)

-- for Claim 8, wherein selecting the image resolution comprises identifying a lowest suitable one of the plurality of progressively higher resolution levels that does not require upward scaling beyond a desired scaling threshold for display in the desired viewport; (column 35, lines 7-31; When a browser requests a monitor image, the server just send the **needed** information for the resolution of the monitor. It inherently requires a lowest suitable resolution level because any level with higher resolution is not needed.)

-- for Claim 9, wherein identifying the lowest suitable one comprises evaluating a highest local resolution level of the plurality of progressively higher resolution levels; (column 35, lines 7-31; When a browser requests a monitor image, a print image, and a lossless image in sequence, it reuses the already-transmitted image data. When a lossless image is retrieved, no redundant data need to be transmitted. The highest local resolution level has to be evaluated to determine the redundant data.)

-- for Claim 10, wherein selectively requesting the portion comprises recalling the highest local resolution level, which is the lowest suitable one; (column 35, lines 7-31; When a browser

requests a monitor image, a print image, and a lossless image in sequence, it reuses the already-transmitted image data. The reusing process is the recalling process.)

-- for Claim 11, wherein selectively requesting the portion comprises remotely retrieving the lowest suitable one, and any resolution levels between the highest local resolution level and the lowest suitable one, from remote storage; (column 35, lines 7-31; When a browser requests a monitor image, a print image, and a lossless image in sequence, it reuses the already-transmitted image data. When a print or lossless image is retrieved, no redundant data need to be transmitted. The print or lossless image specifies a new lowest suitable one corresponding to its resolution. Because the reuse of data, only resolution levels between the highest local resolution level and the new lowest suitable one needs to be transmitted from remote storage in the server.)

-- for Claim 12, wherein selecting the image resolution comprises zooming the desired viewport toward a desired viewport resolution; (column 35, lines 37-57; The scaling is the zooming matching the resultant image to the viewport resolution.)

-- for Claim 19, scaling the image resolution to fit the desired viewport; (column 35, lines 37-57)

-- for Claim 21, wherein the desired order comprises an order of increasing resolution; (column 22, lines 5-9)

-- for Claim 22, wherein requesting the data stream comprises obtaining image characteristics disposed in a header of the data stream; (column 36, lines 4-41)

-- for Claim 23, wherein the image characteristics comprise a quantity of the plurality of data sets, a resolution of each data set, and a compressed size of each data set; (column 36, lines 4-41; Table 3 in column 37)

-- for Claim 24, reading the image characteristics disposed in the header during retrieval of the data stream for selectively retrieving the portion; (column 36, lines 4-41; Table 3 in column 37)

-- for Claim 26, storing the portion in local storage; (Fig. 24; column 35, lines 7-23; For the data to be reused and displayed, the portion is stored in browser that is a local device.)

-- for Claim 27, recomposing the image at the image resolution by combining the portion retrieved from remote storage with a local portion of the plurality of data sets stored in local storage; (column 35, lines 7-31; The browser combines both the reused data of the low resolution version in the local storage and the needed additional data from the server to generate a corresponding high resolution image.)

-- for Claim 28, wherein the recomposing the image at the image resolution comprises executing reverse wavelet decomposition on a group of the data sets ranging from a lowest resolution level to the image resolution, wherein the group comprises the portion and the local portion. (column 33, lines 42-53)

b. For Claims 29-36, 40-49, Keith further teaches:

-- for Claim 29, determining a viewport resolution of a client viewport; (column 8, lines 11-68; column 11, lines 12-15; column 34, line 64 to column 35, line 56; When a agent or device provides its device characteristics to parse, it inherently selective requesting a portion of data to be displayed in its display. The parser thus implicitly determines the resolution of the display.)

-- for Claim 29, (a) identifying a highest local resolution level corresponding to one local set of a plurality of decomposed image sets generated from an image by lossless wavelet decomposition, (b) selecting an acceptable image resolution for display in the client viewport by comparing the viewport resolution against progressively higher resolution levels corresponding to the plurality of decomposed image sets, and (c) remotely retrieving desired sets of the plurality of decomposed image sets for recomposing the image at the acceptable image resolution, *wherein the decomposed image sets form part of an image data file that is losslessly wavelet decomposed and that is stored in a losslessly compressed form on a server independently of any*

request from a client for data of the image sets; (column 8, lines 11-68; column 11, lines 12-15; column 34, line 64 to column 35, line 56; When a agent or device provides its device characteristics to parse, it inherently selective requesting a portion of data to be displayed in its display. Lossless compressed data with markers are stored in a server before any request as shown in Fig. 24. column 35, lines 7-31; The browser combines both the reused data of the low resolution version in the local storage and the needed additional data from the server to generate a corresponding high resolution image. Please also see Examiner's explanations above with regard to 1-2, 4-5, 7-11, 19, 21-24, 26-28.)

-- for Claim 35, wherein remotely retrieving desired sets comprises requesting the desired sets from a remote server via a network. (Fig. 24; column 35, lines 24-36)

With the above-cited teaching and comparing Claims 29-36, 40-49 with Claims 1-2, 4-5 and 7-12, 19, 21-24, 26-28, one can conclude that Keith also teaches the method recited in Claim 29-36, 40-49 as evident with the cited Keith's passages in supporting rejections of Claims 1-2, 4-5, 7-12, 19, 21-24, 26-28.

c. For Claims 50-63, Keith further teaches a system including client workstations (Fig. 24; column 33, lines 35-68; column 35, lines 24-36) to carries out the methods recited for Claims 1-2, 4-5, 7-11, 19, 21-24, 26-28.

With the above-cited teaching and comparing Claims 1-2, 4-5 and 7-11, 19, 21-24, 26-28 with Claims 50-63, one can conclude that Keith also teaches the system recited in Claim 50-63 as evident with the cited Keith's passages in supporting rejections of Claims 1-2, 4-5, 7-11, 19, 21-24, 26-28.

d. For Claims 73-86, Keith further teaches a computer program stored in a machine readable medium to carry out the method recited in Claims 1-2, 4-5 and 7-11, 19, 21-24, 26-28.

(column 5, lines 24-40) With the above-cited teaching and comparing Claims 1-2, 4-5 and 7-11, 19, 21-24, 26-28 with Claims 73-86, one can conclude that Keith also teaches the system recited in Claim 73-86 as evident with the cited Keith's passages in supporting rejections of Claims 1-2, 4-5 and 7-11, 19, 21-24, 26-28.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 13-18, 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keith et al. (US patent 5,881,176) as applied above, and further in view of Bradley (US patent 5,710,835 cited in IDS filed 7/11/2003.)

Keith as applied above teaches parental Claim 12 and 36. As discussed above, Keith also teaches the features recited in Claims 14-16 and 39.

However, Keith does not explicitly teach that the features related to the recited inward and outward zooming.

Bradley teaches a method for selectively transferring image data, the method comprising:

-- selecting an image resolution suitable for display in a desired viewport, wherein the image resolution corresponds to one set of a plurality of data sets decomposed from an image by wavelet decomposition; (block 146 of Fig. 6; column 9, lines 27-58)

-- selectively requesting a portion of the plurality of data sets for recomposition of the image at the image resolution, the portion of the plurality of data sets being smaller than the plurality of data sets wherein selectively requesting the portion comprises requesting a data stream comprising the portion of the plurality of data sets arranged sequentially in a desired order based on the wavelet decomposition, wherein the data sets form part of an image data file that is wavelet decomposed and that is stored in a losslessly compressed form on a server independent of any request from a client; (column 9, lines 4-35; Only data of subbands of a subregion corresponding to a subset of wavelet coefficients are requested and extracted. column 5, lines 45-50; column 6, line 65 to column 7, line 3; The data are arranged according to tile sequence and resolution sequence. column 8, lines 13-30 and 51-65; The wavelet coefficients are stored in a losslessly compressed form as a CID, compressed image data, on a server independent of any request from a client.)

-- in one case, wherein zooming the desired viewport comprises zooming the desired viewport inwardly toward a spatial region of interest; (column 10, lines 58-68; A region of interest and scale are identified. Then data are retrieved for displaying the desired view.)

-- in one case, wherein zooming the desired viewport comprises zooming the desired viewport outwardly for viewing a relatively broader region of interest, wherein selectively requesting the portion comprises using a highest local resolution level corresponding to a locally stored group of the plurality of data sets for zooming the desired viewport outwardly. (column 10, lines 52-57; An image of a resolution having a closest power-of-two resolution greater than the requested, without the interpolation, has a size larger than the display. The interpolation is used to zoom the viewport to cover the entire reconstructed image including the borders and display the entire image of the desired resolution. This process is equivalent to zoom the viewport to cover all of the image data.)

It is desirable to have the flexibility to display an image at an arbitrary resolution. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to apply Bradley's teaching to match Keith's viewports with desired resolution and selected region with inward and/or outward zoom of viewports because the combination improves flexibility of the image retrieval system.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Keith et al. (US patent 5,881,176) as applied to Claim 5, and further in view of Sodagar et al. (US patent 6,157,746 cited previously.)

Keith teaches the parent Claim 5.

However, Keith does not teach the feature related different coding for low-frequency and high-frequency components.

Sodagar teaches a wavelet compression system and method, comprising:

-- compressing the high-frequency components using actual values, and compressing the low frequency component at the lowest resolution level using prediction errors. (column 18, lines 3-24)

It is desirable to improve coding efficiency. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to apply Sodagar's teaching of coding Keith's LL band with predicting error in Keith's compression system and method because the combination improves coding efficiency of LL band and thus the whole image.

8. Claims 64-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keith et al. (US patent 5,881,176) as applied to Claim 50, and further in view of Cooke, Jr. et al. (US patent 6,574,629 cited previously.)

Keith teaches the parent Claim 50. Keith also teaches the limitation recited in Claim 72 as discussed above.

However, Keith does not teach a picture archiving and communication system (PACS) or imaging systems recited in the above-listed claims.

Cooke teaches PACS system, comprising:

-- a PACS system; (column 33, lines 28-40)

-- an MRI system, a computed tomography system, a positron emission tomography system, a radio fluoroscopy system, a computed radiography system, and an ultrasound system; (Fig. 1; column 9, line 66 to column 10, line 51; column 34, lines 1-20)

-- compression image data for storage, transmission, and retrieval. (column 9, line 66 to column 10, line 51; column 13, line 61 to column 14, line 5)

It is desirable to decode a localized portion of a medical image efficiently for viewing and analysis. It would have been obvious to one of ordinary skill in the art, at the time of the invention, to apply Keith's compression system and method to compress various images used in Cooke's PACS system because the combination facilitates retrieval interested regions in medical images for medical analysis.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wenpeng Chen whose telephone number is 571-272-7431. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571-272-7778. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300 for regular communications and 571-273-8300 for After Final communications. TC 2600's customer service number is 571-272-2600.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Wenpeng Chen
Primary Examiner
Art Unit 2624

August 4, 2006